Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-223. (Canceled)

224. (Currently Amended) A method of at least one of maintaining and restoring the viability of at least one organ subjected to a period of ischemia or hypoxia, comprising:

perfusing said at least one organ with a first medical fluid at a first temperature to at least one of maintain and restore pre-ischemia or pre-hypoxia energy levels in the organ; and

perfusing the organ with a second medical fluid containing substantially no oxygen at a second temperature to at least one of store and transport the organ, wherein said second temperature is lower than said first temperature, wherein the first temperature is from about ~~12°C~~ 20°C to about 24°C.

225-227. (Cancelled)

228. (Previously Presented) The method of claim 224, wherein the first temperature is 22 to 23°C.

229-231. (Canceled)

232. (Previously Presented) The method of claim 224, wherein the second temperature is from approximately 1°C to approximately 15°C.

233. (Previously Presented) The method of claim 224, wherein the second temperature is from 4°C to 10°C.

234. (Previously Presented) The method of claim 224, wherein the second temperature is at most 15°C.

235. (Previously Presented) The method of claim 224, wherein the first temperature is about 20°C and the second temperature is at most 15°C.

236. (Previously Presented) The method of claim 234, wherein the second temperature is from about 4°C to about 10°C.

237. (Previously Presented) The method of claim 235, wherein the second temperature is from about 4°C to about 10°C.

238. (Previously Presented) The method of claim 224, wherein the first medical fluid is an oxygenated solution.

239. (Previously Presented) The method of claim 238, wherein the first medical fluid is an oxygenated hemoglobin-based solution and the second fluid is a simple crystalloid solution augmented with antioxidants.

240. (Previously Presented) The method of claim 224, wherein the second medical fluid comprises at least one member selected from the group consisting of an oxygen carrier, a free radical scavenger, a pituitary growth factor extract and cell culture media.

241. (Previously Presented) The method of claim 240, wherein the first medical fluid comprises at least one viability marker.

242. (Previously Presented) The method of claim 224, further comprising monitoring the viability of the organ during at least one of perfusion of the organ with the first medical fluid at the first temperature and during perfusion of the organ with the second medical fluid at the second temperature.

243. (Previously Presented) The method of claim 242, wherein viability of the organ is monitored by a sensor that senses fluid characteristics indicative of organ viability and at least one of displays sensed data and relays sensed data to a microprocessor for assessment.

244. (Previously Presented) The method of claim 224, wherein the organ is perfused at the first temperature at least one of intermittently and continuously at a pressure within a range of approximately 40 to 100 mmHg.

245. (Previously Presented) The method of claim 224, wherein the organ is perfused at the second temperature at least one of intermittently and continuously at a pressure within a range of approximately 5 to 40 mmHg.

246. (Previously Presented) The method of claim 224, wherein the organ is perfused utilizing a pressure source incapable of providing pressures greater than 100 mmHg.

247. (Previously Presented) The method of claim 224, wherein the organ is perfused utilizing a pressure source incapable of providing pressures greater than 40 mmHg.

248. (Previously Presented) The method of claim 224, further comprising collecting medical fluid that has passed through the organ in a separate organ bath for each organ, removing medical fluid from each organ bath, filtering the medical fluid and returning the medical fluid to each organ bath.

249. (Previously Presented) The method of claim 224, further comprising collecting medical fluid that has passed through the organ in a separate organ bath for each organ, removing medical fluid from each organ bath and sensing characteristics of the collected medical fluid indicative of organ viability to allow a determination of whether the viability of the organ has been at least one of sustained and restored.

250. (Previously Presented) The method of claim 224, further comprising collecting medical fluid that has passed through the organ in a separate organ bath for each organ, removing medical fluid from each organ bath and filtering, degassing and oxygenating the medical fluid and then either returning the medical fluid to each organ bath or to a medical fluid reservoir based on a sensed pH level of the medical fluid.

251. (Previously Presented) The method of claim 224, further comprising prior to perfusing the at least one organ with the first medical fluid at the first temperature, maintaining the organ at a hypothermic temperature.

252. (Previously Presented) The method of claim 224, further comprising prior to perfusing the at least one organ with the first medical fluid at the first temperature, at least one of perfusing and flushing the at least one organ with a medical fluid at a hypothermic temperature to reduce or stop catabolic changes.

253. (Previously Presented) The method of claim 252, wherein said medical fluid at a hypothermic temperature comprises at least one member selected from the group consisting of antioxidants, anti-apoptic agents and agents that decrease vascular permeability.

254. (Previously Presented) The method of claim 252, wherein said medical fluid comprises at least one marker for viability measurement.

255. (Previously Added) The method of claim 224, further comprising transplanting the organ into a mammal while the organ remains at the second temperature.

256. (Previously Presented) The method of claim 255, further comprising again perfusing the organ with the first medical fluid at the first temperature after the organ has been transplanted into a mammal.

257. (Previously Presented) The method of claim 255, further comprising again perfusing the organ with the first medical fluid at the first temperature prior to transplanting the organ into a mammal.

258. (Previously Presented) The method of claim 257, further comprising again perfusing the organ with the second fluid at the second temperature prior to transplanting the organ into a mammal.

259. (Previously Presented) The method of claim 224, further comprising at least one of storing and transporting the organ in an organ cassette after perfusion of the organ with the second medical fluid at the second temperature, the organ cassette including a portable housing and an organ supporting surface configured to support an organ while allowing

effluent medical fluid to pass therethrough, the portable housing including openings configured to allow tubing to pass therethrough and to be connected to the organ.

260. (Previously Presented) The method of claim 224, further comprising at least one of storing and transporting the organ in an organ cassette after perfusion of the organ with the first medical fluid at the first temperature, the organ cassette including a portable housing; an organ supporting surface; and tubing connectable to the organ to allow perfusion of the organ.

261. (Previously Presented) The method of claim 224, wherein the organ is disposed in at least one of a portable container that is capable of maintaining the organ at a temperature of at most 15°C and a disposable cassette during perfusion of the organ.

262. (Previously Presented) The method of claim 224, wherein the organ is disposed in at least one of a portable container that is capable of maintaining the organ at a temperature of at most 10°C and a disposable cassette during perfusion of the organ.

263. (Previously Presented) The method of claim 224, further comprising placing the organ in a portable container that is capable of maintaining the organ at a temperature of at most 15°C to at least one of store and transport the organ.

264. (Previously Presented) The method of claim 224, further comprising placing the organ in a portable container that is capable of maintaining the organ at a temperature of at most 10°C to at least one of store and transport the organ.

265. (Previously Presented) The method of claim 224, comprising placing the organ in a portable perfusion unit to at least one of store and transport the organ.

266. (Previously Presented) The method of claim 224, comprising placing the organ in a disposable cassette to at least one of store and transport the organ.

267. (Previously Presented) The method of claim 265, further comprising monitoring the location of the organ using a global positioning system.

268-292. (Canceled)

293. (New) The method of claim 224, wherein the first and second fluids are the same medical fluid.

294. (New) A method of at least one of maintaining and restoring the viability of at least one organ subjected to a period of ischemia or hypoxia, comprising:

perfusing said at least one organ with a medical fluid at a first temperature to at least one of maintain and restore pre-ischemia or pre-hypoxia energy levels in the organ the first temperature is from about 20°C to about 24°C; and

perfusing the organ with the medical fluid at a second temperature to at least one of store and transport the organ, wherein said second temperature is lower than said first temperature, wherein the second temperature is from about 4°C to about 10°C.